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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,318	03/17/2005	Mirko Appel	2002P15665WOUS	4524
7590 Siemens Corporation Intellectual Property Department 170 Wood Avenue South Iselin, NJ 08830			EXAMINER FAYYAZ, NASHMIYA SAQIB	
			ART UNIT 2856	PAPER NUMBER
			MAIL DATE 10/18/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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**Office Action Summary**

Application No.

10/528,318

Applicant(s)

APPEL ET AL.

Examiner

Nashmiya S. Fayyaz

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 July 2007 and 18 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 9/18/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 13, 15-17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al- US Patent # 5,691,707. As to claim 1, Smith et al. disclose assigning an acoustical signal (audible alarm) to a specific failure (vibration reaches a preselected level indicating impending failure) of a rotatable component (bearing block 40) and mounting a vibratory device (vibration sensor 36 with its receiver 35) on the component (block 40) wherein the vibratory device is configured to generate the acoustic signal (audible alarm via receiver 35), see specifically col. 2, lines 21-35 and figs. 1-6. Further, it is noted that Smith et al lack a teaching for application in a technical installation. As to the application of

the method in a technical installation, Smith does indicate the usage in a bearing of a rotating shaft (50) or pump (42) indicating the usage in a technical installation since such devices are known to be utilized in technical installations. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have designated the device to be applicable to technical installations since pumps and shafts are known to be used in such installations and it is old and well-known to monitor bearing failures in technical installations. As to claims 15 and 19, note the embodiment of fig. 6 where two sensor fittings 10 are installed on two bearing housings. As to claims 16 and 20, Smith et al disclose application of two devices (temperature sensor 34 and vibration sensor 36) to a single component where each "device" is assigned to a specific failure (temperature or vibration). As to claim 17, note claim 13 rejection above which will not be repeated for the sake of brevity. Further, it is noted that Smith et al lack a specific teaching for application in a power plant. Again, Smith does indicate the usage in a bearing of a rotating shaft (50) or pump (42) indicating the usage in a technical installation since such devices are known to be utilized in power plants, as well. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have designated the device to be applicable to power plants since pumps and shafts are known to be used in such installations and it is old and well-known to monitor bearing failures in power plants given the impending damage that could be caused.

4. Claims 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al as applied to claims 13, 15-17, 19 and 20 above, and further in view of Anderson, III et al. As to claims 14 and 18, Smith et al lack a specific disclosure of the type of vibration sensor being employed as being in the form of a plate. In a related prior art device, Anderson, III et al teach a vibration sensor for monitoring failures in rotating machinery and is in the form of a plurality of ribbons 4, 4', 4" each resonant at a preselected frequency, see Abstract and col. 3, lines 20 et seq. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the Anderson, III et al vibration sensor to the Smith et al device since Smith et al fail to specify the type of vibration sensor employed and Anderson, III et al disclose usage of the vibration sensor in the art of vibration monitoring of rotating machinery as does Smith et al.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 13-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly

connected, to make and/or use the invention. In the specification, it is indicated that the plate 9 vibrates when it is activated at its resonance frequency which is the same frequency as caused by the bearing 7 getting faulty. So, this would mean that there is **only a single frequency** at which the bearing is faulty. Is this correct? It would appear that if this is correct, that frequencies slightly above or below would not be detected. Further, if the plate resonates at the same frequency as the faulty bearing, would such an operational frequency be audible to humans, as on page 5? Are all fault frequencies audible? In conclusion, it is unclear how this device would be of any benefit since it would only be operational at a single frequency and faults are known to be not of an exact frequency.

### ***Response to Arguments***

7. Applicant's arguments filed 7/18/07 have been fully considered but they are not persuasive. Applicant has argued that Smith converts the signal to an audible or visual record and sends the signal to a receiver. Such an argument is not found persuasive because the claims merely recite *assigning* an acoustic signal to a specific failure and mounting a **vibratory device** where the vibratory device is configured to generate the signal where there is no indication that the vibratory device cannot generate the signal to send it to a receiver. Further, it is noted that some sort of conversion must be in the present invention as well since

most fault frequencies in technical installations do not lie in the humanly audible range.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nashmiya S. Fayyaz whose telephone number is 571-272-2192. The examiner can normally be reached on Mondays and Thursdays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron E. Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Examiner  
Art Unit 2856

nf  
10/11/07



DANIEL S. LARKIN  
PRIMARY EXAMINER